WHAT IS CLAIMED IS:

1. An optical scanning system comprising:

a light source;

and an optical scanner which performs optical scanning of a surface to be scanned by deflecting a luminous flux having a wavelength λ from said light source by means of an optical deflector, and condensing the deflected flux toward the surface to be scanned through a scanning image forming optical system, thereby forming an optical spot on said surface to be scanned,

wherein said scanning image forming optical system has at least one lens; and

wherein, in the said scanning image forming optical system, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846 \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction of said scanning image forming optical system; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a

spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32\ f\sigma\ (n-1)\}]$.

2. An optical scanning system according to claim 1,

wherein, when W represents an optical flux diameter in the main scanning direction of the deflected luminous flux entering the i-th lens surface as counted from the optical deflector, the surface accuracy σi, the focal length $f\sigma$, and the refractive index n satisfy a following condition:

(2) $0 < \log \sigma i < -2 \log (1/W) + \log [1/\{32\ f\sigma\ (n-1)\}]$

for each lens surface, for a spatial frequency equal to or smaller than (1/W), without depending upon the spatial frequency in the main scanning direction on the lens surface (1/L).

3. An optical scanning system according to claim 1,

wherein said light source is a semiconductor laser, and the luminous flux from the light source is coupled with a subsequent optical system by a coupling lens, deflected by the optical deflector, and enters the scanning image forming

optical system.

4. An optical scanning system according to claim 3, wherein a function of the coupling lens is a collimating function.

5. An optical scanning system according to claim 3, wherein the scanning image forming optical system consists of only lenses including said one lens.

6. An optical scanning system according to claim 4, wherein the scanning image forming optical system consists of only lenses including said one lens.

7. An optical scanning system according to claim 5, wherein the scanning image forming optical system consists of two lenses including said one lens.

8. An optical scanning system according to claim 6, wherein the scanning image forming optical system consists of two lenses including said one lens.

9. An optical scanning system according to claim 3, wherein said optical deflector is a rotary mirror having a deflecting reflective surface;

wherein the coupled luminous flux is condensed by a line image forming optical system in a sub-scanning direction and is formed into a line image long in the main scanning direction near said deflecting reflective surface; and

wherein said scanning image forming optical system is an anamorphic optical system associating a starting point of deflection by the optical deflector and the surface to be scanned into an opto-geometrical conjugate relationship relative to the sub-scanning direction.

10. An optical scanning system according to claim 9,

wherein the function of the coupling lens is a collimating function.

11. An optical scanning system according to claim 9,

wherein the scanning image forming optical system consists of only lenses including said one lens.

12. An optical scanning system according to claim 10,

wherein the scanning image forming optical system consists of only lenses including said one lens.

13. An optical scanning system according to claim 11,

wherein the scanning image forming optical system

consists of two lenses including said one lens.

14. An optical scanning system according to claim 12, wherein the scanning image forming optical system consists of two lenses including said one lens.

15. An optical scanning system according to claim 1, wherein said optical deflector is a rotary polygon mirror.

16. An optical scanning method, comprising the steps of:

providing a scanning image forming optical system having at least one lens, in which, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction of said scanning image forming optical system; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material

of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length fσ, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32\ f\sigma\ (n-1)\}]$, and

causing an optical deflector to deflect a luminous flux having a wavelength λ from a light source, condensing the deflected luminous flux through the scanning image forming optical system toward a surface to be scanned, and forming an optical spot on said surface to be scanned, thereby conducting optical scanning of said surface to be scanned.

17. An optical scanning method according to claim 16, wherein, in the providing step, when W represents an optical flux diameter in the main scanning direction of the deflected luminous flux entering the i-th lens surface as counted from the optical deflector, the surface accuracy σi, the focal length fσ, and the refractive index n satisfy a following condition:

(2) $0 < \log \sigma i < -2 \log (1/W) + \log [1/\{32\ f\sigma\ (n-1)\}]$

for each lens surface, for a spatial frequency equal to or

smaller than (1/W), without depending upon the spatial frequency in the main scanning direction on the lens surface (1/L).

18. An optical scanning method according to claim 16,

wherein in the optical scanning conducting step, said light source is a semiconductor laser, and the luminous flux is coupled with a subsequent optical system by a coupling lens, deflected by the optical deflector, and enters the scanning image forming optical system.

19. An optical scanning method according to claim 18,

wherein in the optical scanning conducting step, a function of the coupling lens is a collimating function.

20. An optical scanning method according to claim 18,

wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

21. An optical scanning method according to claim 19,

wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

22. An optical scanning method according to claim 20, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

23. An optical scanning method according to claim 21, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

24. An optical scanning method according to claim 18, wherein in the optical scanning conducting step said optical deflector is a rotary mirror having a deflecting reflective surface, the coupled luminous flux is condensed by a line image forming optical system in a sub-scanning direction and is formed into a line image long in the main scanning direction near said deflecting reflective surface; and said scanning image forming optical system is an anamorphic optical system associating a starting point of deflection by the optical deflector and the surface to be scanned into an opto-geometrical conjugate relationship relative to the sub-scanning direction.

25. An optical scanning method according to claim 24, wherein in the optical scanning conducting step the

function of the coupling lens is a collimating function.

26. An optical scanning method according to claim 24, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

27. An optical scanning method according to claim 25, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

28. An optical scanning method according to claim 26, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

29. An optical scanning method according to claim 27, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

30. An optical scanning method according to claim 16, wherein in the optical scanning conducting step said optical deflector is a rotary polygon mirror.

31. An optical scanning method comprising the steps of:

providing a semiconductor laser as a light source;

providing a scanning image forming optical system having at least one lens, in which, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction of said scanning image forming optical system; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32\ f\sigma\ (n-1)\}]$; and

causing a luminous flux having a wavelength λ from the

light source side to enter an optical deflector via a coupling lens, deflecting the luminous flux through said optical deflector, condensing the deflected luminous flux toward a surface to be scanned through the scanning image forming optical system, and forming an optical spot on the surface to be scanned, thereby conducting optical scanning of the surface to be scanned.

32. An optical scanning method according to claim 31, wherein in the optical scanning conducting step the luminous flux is coupled with a subsequent optical system by the coupling lens, deflected by the optical deflector, and enters the scanning image forming optical system.

33. An optical scanning method according to claim 32, wherein in the optical scanning conducting step, a function of the coupling lens is a collimating function.

34. An optical scanning method according to claim 32, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

35. An optical scanning method according to claim 33, wherein in the providing step the scanning image

forming optical system consists of only lenses including said one lens.

36. An optical scanning according to claim 34, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

37. An optical scanning method according to claim 35, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

38. An optical scanning method according to claim 31, wherein in the optical scanning conducting step said optical deflector is a rotary mirror having a deflecting reflective surface, the coupled luminous flux is condensed by a line image forming optical system in a sub-scanning direction and is formed into a line image long in the main scanning direction near said deflecting reflective surface; and said scanning image forming optical system is an anamorphic optical system associating a starting point of deflection by the optical deflector and the surface to be scanned into an opto-geometrical conjugate relationship relative to the sub-scanning direction.

39. An optical scanning method according to claim 38, wherein in the optical scanning conducting step the function of the coupling lens is a collimating function.

40. An optical scanning method according to claim 38, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

41. An optical scanning method according to claim 39, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

42. An optical scanning method according to claim 40, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

43. An optical scanning method according to claim 41, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

44. An optical scanning method comprising the steps of:

providing a semiconductor laser as a light source;

providing a scanning image forming optical system having at least one lens, in which, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction of said scanning image forming optical system; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32\ f\sigma\ (n-1)\}]$; and

converting a luminous flux having a wavelength λ from the light source into a parallel luminous flux, then

entering an optical deflector via a coupling lens, a function of the coupling lens being a collimating function, deflecting the luminous flux through said optical deflector, condensing the deflected luminous flux toward a surface to be scanned through a scanning image forming optical system, and forming an optical spot on the surface to be scanned, thereby conducting optical scanning of the surface to be scanned.

45. An optical scanning method according to claim 44, wherein the scanning image forming lens consists of only lenses including said one lens.

46. An optical scanning method according to claim 45, wherein the scanning image forming lens consists of two lenses including said one lens.

47. An optical scanning method, comprising the steps of:

providing a semiconductor laser as a light source,

providing a scanning image forming optical system having at least one lens, in which, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32 f\sigma (n-1)\}]$, said scanning image forming optical system being an anamorphic optical system associating a starting point of deflection by an optical deflector and a surface to be scanned into an opto-geometrical conjugate relationship relative to a sub-scanning direction;

coupling a luminous flux having a wavelength λ from the light source with a subsequent optical system through a coupling lens, condensing the coupled luminous flux in the sub-scanning direction by a line image forming optical system, forming a line image long in the main scanning direction near the deflecting reflective surface position of

a rotary mirror serving as the optical deflector, and condensing the deflected luminous flux by the scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned, thereby conducting optical scanning of said surface to be scanned.

48. An optical scanning method according to Claim 47, wherein in the optical scanning conducting step, a function of the coupling lens is a collimating function.

49. An optical scanning method according to claim 47, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

50. An optical scanning method according to claim 48, wherein in the providing step the scanning image forming optical system consists of only lenses including said one lens.

51. An optical scanning method according to claim 49, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

52. An optical scanning method according to claim 50, wherein in the providing step the scanning image forming optical system consists of two lenses including said one lens.

53. An optical scanning method, comprising the steps of:

providing a semiconductor laser as a light source,

providing a scanning image forming optical system having at least one lens, in which, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction of said scanning image forming optical system; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial

frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32 f\sigma (n-1)\}]$, said scanning image forming optical system being an anamorphic optical system associating a starting point of deflection by an optical deflector and the surface to be scanned into an opto-geometrical conjugate relationship relative to a sub-scanning direction;

converting a luminous flux having a wavelength λ from the light source into a parallel luminous flux, then condensing the parallel flux in the sub-scanning direction through a line image forming optical system to form a line image long in the main scanning direction near a deflecting reflective surface position of a rotary mirror serving as the optical deflector, and condensing the deflected luminous flux by the scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned, thereby conducting optical scanning of said surface to be scanned.

54. An optical scanning method according to claim 53, wherein in the providing step said scanning image forming lens consists of only lenses including said one lens.

55. An optical scanning method according to claim 54, wherein in the providing step said scanning image forming lens consists of two lenses including said one lens.

56. An optical scanning method according to claim 16, wherein in the optical scanning conducting step the luminous flux is deflected by a rotary polygon mirror serving as the optical deflector.

57. An optical scanning method according to claim 31,

wherein in the optical scanning conducting step the luminous flux is deflected by a rotary polygon mirror serving as the optical deflector.

58. An optical scanning method according to claim 44, wherein in the optical scanning conducting step the luminous flux is deflected by a rotary polygon mirror serving as the optical deflector.

59. An optical scanning method according to claim 47,

wherein in the optical scanning conducting step the luminous flux is deflected by a rotary polygon mirror serving as the optical deflector.

60. An optical scanning method according to claim 53,

wherein in the optical scanning conducting step the luminous flux is deflected by a rotary polygon mirror serving as the optical deflector.

61. A scanning image forming optical system used in an optical scanner performing optical scanning of a surface to be scanned by deflecting a luminous flux having a wavelength λ from a light source, and condensing the deflected luminous flux by the scanning image forming optical system toward the surface to be scanned to form an optical spot on the surface to be scanned,

wherein said optical scanner has an aimed spot diameter ω for an optical spot formed by the scanning image forming optical system at an optical spot height of 0;

wherein said scanning image forming optical system has at least one lens; and

wherein when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fn^2/\omega^2\} - fm$$

where, fm represents the focal length in the main scanning direction; k represents the number of lens surfaces; σi

represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log(1/L) + \log [1/\{32 f\sigma(n-1)\}]$.

62. A scanning image forming optical system according to claim 61,

wherein when W represents an optical flux diameter in the main scanning direction of the deflected luminous flux entering the i-th lens surface as counted from the optical deflector, the surface accuracy σi, the focal length $f\sigma$, and the refractive index n satisfy a following condition:

(2) $0 < \log \sigma i < -2 \log (1/W) + \log \{1/\{32 f\sigma (n-1)\}]$

for each lens surface for a spatial frequency equal to or smaller than (1/W), without depending upon the spatial frequency.

63. A scanning image forming optical system according to claim 61,

wherein said light source is a semiconductor laser, and

the luminous flux from the semiconductor laser enters said scanning image forming optical system via a coupling lens and an optical deflector.

64. A scanning image forming optical system according to claim 63,

wherein the luminous flux is converted into a parallel luminous flux by the coupling lens and is deflected by the optical deflector to enter the optical scanner.

65. A scanning image forming optical system according to claim 63,

wherein the scanning image forming optical system consists of only lenses including said one lens.

66. A scanning image forming optical system according to claim 64,

wherein the scanning image forming optical system consists of only lenses including said one lens.

67. A scanning image forming optical system according to claim 65, the scanning image forming optical system consists of two lenses including said one lens.

68. A scanning image forming optical system according

to claim 66, the scanning image forming optical system consists of two lenses including said one lens.

69. A scanning image forming optical system according to claim 61, comprising:

wherein the scanning image forming optical system is an anamorphic optical system associating a starting point of deflection by the optical deflector and the surface to be scanned into an opto-geometrical conjugate relationship relative to the sub-scanning direction.

70. A scanning image forming optical system according to claim 69,

wherein the deflected luminous flux which is a parallel luminous flux in the main scanning direction enters the scanning image forming optical system.

71. A scanning image forming optical system according to claim 69,

wherein the scanning image forming optical system consists of only lenses including said one lens.

72. A scanning image forming optical system according to claim 70,

wherein the scanning image forming optical system

consists of only lenses including said one lens.

73. A scanning image forming optical system according to claim 71,

wherein the scanning image forming optical system consists of two lenses including said one lens.

74. A scanning image forming optical system according to claim 72,

wherein the scanning image forming optical system consists of two lenses including said one lens.

75. A scanning image forming optical system according to claim 61,

wherein said one lens is a plastic lens.

76. An image forming apparatus, comprising:

a photosensitive medium for forming a latent image thereupon through optical scanning of a photosensitive surface thereof;

a visualizing device configured to visualize the latent image on the photosensitive medium; and

an optical scanner configured to perform optical scanning of the photosensitive surface of the photosensitive medium to form the latent image by deflecting a luminous

flux having a wavelength λ from a light source by means of an optical deflector, and condensing the deflected flux toward the photosensitive surface of the photosensitive medium through a scanning image forming optical system, thereby forming an optical spot on said surface to be scanned, wherein said scanning image forming optical system has at least one lens, and wherein, in the said scanning image forming optical system, when a focal length $f\sigma$ in a main scanning direction at a surface accuracy σi is defined as:

$$f\sigma = \{2.6846\ \lambda \times \sqrt{(k)} \times fm^2/\omega^2\} - fm$$

where, fm represents a focal length in the main scanning direction of said scanning image forming optical system; k represents the number of lens surfaces; ω represents an aimed spot diameter of the optical spot in the main scanning direction at an image height of 0; σi represents a surface accuracy of an i-th lens surface as counted from an optical deflector side; n represents a refractive index of material of a lens having the i-th lens surface; and 1/L represents a spatial frequency in the main scanning direction on said lens surface; then, said surface accuracy σi, said focal length $f\sigma$, said refractive index n, and said spatial frequency 1/L satisfy, for each lens surface, a following condition:

(1) $0 < \log \sigma i < -2 \log (1/L) + \log [1/\{32 f\sigma (n-1)\}]$.

77. An image forming apparatus according to claim 76, wherein, in the optical scanner, when W represents an optical flux diameter in the main scanning direction of the deflected luminous flux entering the i-th lens surface as counted from the optical deflector, the surface accuracy σi, the focal length $f\sigma$, and the refractive index n satisfy a following condition:

(2) $0 < \log \sigma i < -2 \log (1/W) + \log [1/\{32 f\sigma (n-1)\}]$

for each lens surface for a spatial frequency equal to or smaller than (1/W), without depending upon the spatial frequency.

78. An image forming apparatus according to claim 76, wherein said light source is a semiconductor laser, and the luminous flux from the light source is coupled with a subsequent optical system by a coupling lens, deflected by the optical deflector, and enters the scanning image forming optical system.

79. An image forming apparatus according to claim 78, wherein a function of the coupling lens is a collimating function.

80. An image forming apparatus according to claim 78, wherein the scanning image forming optical system consists of only lenses including said one lens.

81. An image forming apparatus according to claim 79, wherein the scanning image forming optical system consists of only lenses including said one lens.

82. An image forming apparatus according to claim 80, wherein the scanning image forming optical system consists of two lenses including said one lens.

83. An image forming apparatus according to claim 81, wherein the scanning image forming optical system consists of two lenses including said one lens.

84. An image forming apparatus according to claim 78, wherein said optical deflector is a rotary mirror having a deflecting reflective surface;

wherein the coupled luminous flux is condensed by a line image forming optical system in a sub-scanning direction and is formed into a line image long in the main scanning direction near said deflecting reflective surface; and

wherein said scanning image forming optical system is

an anamorphic optical system associating a starting point of deflection by the optical deflector and the surface to be scanned into an opto-geometrical conjugate relationship relative to the sub-scanning direction.

85. An image forming apparatus according to claim 84, wherein the function of the coupling lens is a collimating function.

86. An image forming apparatus according to claim 84, wherein the scanning image forming optical system consists of only lenses including said one lens.

87. An image forming apparatus according to claim 85, wherein the scanning image forming optical system consists of only lenses including said one lens.

88. An image forming apparatus according to claim 86, wherein the scanning image forming optical system consists of two lenses including said one lens.

89. An image forming apparatus according to claim 87, wherein the scanning image forming optical system consists of two lenses including said one lens.

90. An image forming apparatus according to claim 76, wherein said optical deflector is a rotary polygon mirror.

91. An image forming apparatus according to claim 76, wherein said photosensitive medium is a photoconductive member, and the electrostatic latent image formed through uniform charging and optical scanning by the optical scanner of the photosensitive surface of the photosensitive medium is visualized into a toner image.

92. An optical scanner which performs optical scanning of a surface to be scanned by deflecting a luminous flux having a wavelength λ from a light source by means of an optical deflector, condensing the deflected luminous flux through a scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned,

wherein when the optical spot to be formed on the surface to be scanned has an aimed spot diameter ω in a main scanning direction of the optical spot at an image height of 0, and a change Δ in a beam waist position in the main scanning direction of the deflected luminous flux relative to the surface to be scanned is exploded into components of a spatial frequency, said change Δ satisfies a condition:

(20) $\{\Delta\cdot\lambda/\omega^2\} < 0.4$

within a range of spatial frequency (1/L: line/mm) of:

$0.1 < (1/L) < 5$.

93. An optical scanner which performs optical scanning of a surface to be scanned by deflecting a luminous flux having a wavelength λ from a light source by means of an optical deflector, condensing the deflected luminous flux through a scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned,

wherein said scanning image forming optical system comprises one or more lenses; and

wherein when the optical spot to be formed on the surface to be scanned has an aimed spot diameter ω in a main scanning direction of the optical spot at an image height of 0, and a surface accuracy σ on each lens of said scanning image forming optical system is exploded into components of a spatial frequency, within a range of the spatial frequency (1/L: line/mm) of:

$0.1 < (1/L) < 5$,

a lens surface accuracy σ, a focal length $f\sigma$ in the main scanning direction at said surface accuracy σ, and a refractive index n of a lens having said lens surface

satisfy a condition:

(21) $0 < \log \sigma < -2 \log (1/L) + \log [1/\{32 f\sigma (n-1)\}]$

within a range of luminous flux width equal to or greater than W in the main scanning direction on said lens surface, and satisfy a condition:

(22) $0 < \log \sigma < -2 \log (1/W) + \log [1/\{32 f\sigma (n-1)\}]$

within a range of luminous flux width equal to or smaller than W.

94. An optical scanner which performs optical scanning of a surface to be scanned by deflecting a luminous flux having a wavelength λ from a light source by means of an optical deflector, condensing the deflected luminous flux through a scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned,

wherein said scanning image forming optical system comprises one or more mirrors having an image forming function; and

wherein when the optical spot to be formed on the surface to be scanned has a spot diameter ω in an aimed main scanning direction of the optical spot at an image height of 0, and the surface accuracy σ of each mirror of said scanning image forming optical system is exploded into components of

a spatial frequency within a range of the spatial frequency ($1/L$: line/mm) of:

$0.1 < (1/L) < 5$,

a mirror surface accuracy σ, and a focal length $f\sigma$ in the main scanning direction at said surface accuracy σ satisfy a condition:

(23) $0 < \log \sigma < -2 \log (1/L) + \log [1/\{64 f\sigma\}]$

within a range of luminous flux width equal to or greater than W in the main scanning direction on said mirror surface, and satisfy a condition:

(24) $0 < \log \sigma i < -2 \log (1/W) + \log [1/\{64 f\sigma\}]$

within a range of luminous flux equal to or smaller than W.

95. An image forming apparatus, comprising:

a photosensitive medium for forming a latent image thereupon through optical scanning of a photosensitive surface thereof;

a visualizing device configured to visualize the latent image on the photosensitive medium; and

an optical scanner configured to perform optical scanning of the photosensitive surface of the photosensitive medium to form the latent image by deflecting a luminous flux having a wavelength λ from a light source by means of an optical deflector, condensing the deflected luminous flux

through a scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned,

wherein when the optical spot to be formed on the surface to be scanned has an aimed spot diameter ω in a main scanning direction of the optical spot at an image height of 0, and a change Δ in a beam waist position in the main scanning direction of the deflected luminous flux relative to the surface to be scanned is exploded into components of a spatial frequency, said change Δ satisfies a condition:

(20) $\{\Delta \cdot \lambda / \omega^2\} < 0.4$

within a range of spatial frequency (1/L: line/mm) of:

$0.1 < (1/L) < 5.$

96. An image forming apparatus, comprising:

a photosensitive medium for forming a latent image thereupon through optical scanning of a photosensitive surface thereof;

a visualizing device configured to visualize the latent image on the photosensitive medium; and

an optical scanner configured to perform optical scanning of the photosensitive surface of the photosensitive medium to form the latent image by deflecting a luminous flux having a wavelength λ from a light source by means of

an optical deflector, condensing the deflected luminous flux through a scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned,

wherein said scanning image forming optical system comprises one or more lenses; and

wherein when the optical spot to be formed on the surface to be scanned has an aimed spot diameter ω in a main scanning direction of the optical spot at an image height of 0, and a surface accuracy σ on each lens of said scanning image forming optical system is exploded into components of a spatial frequency, within a range of the spatial frequency (1/L: line/mm) of:

$0.2 < (1/L) < 5$,

a lens surface accuracy σ, a focal length $f\sigma$ in the main scanning direction at said surface accuracy σ, and a refractive index n of a lens having said lens surface satisfy a condition:

(21) $0 < \log \sigma < -2 \log (1/L) + \log [1/\{32\ f\sigma\ (n-1)\}]$

within a range of luminous flux width equal to or greater than W in the main scanning direction on said lens surface, and satisfy a condition:

(22) $0 < \log \sigma < -2 \log (1/W) + \log [1/\{32\ f\sigma\ (n-1)\}]$

within a range of luminous flux width equal to or smaller

than W.

97. An image forming apparatus, comprising:

a photosensitive medium for forming a latent image thereupon through optical scanning of a photosensitive surface thereof;

a visualizing device configured to visualize the latent image on the photosensitive medium; and

an optical scanner configured to perform optical scanning of the photosensitive surface of the photosensitive medium to form the latent image by deflecting a luminous flux having a wavelength λ from a light source by means of an optical deflector, condensing the deflected luminous flux through a scanning image forming optical system toward the surface to be scanned to form an optical spot on said surface to be scanned,

wherein said scanning image forming optical system comprises one or more mirrors having an image forming function; and

wherein when the optical spot to be formed on the surface to be scanned has a spot diameter ω in an aimed main scanning direction of the optical spot at an image height of 0, and the surface accuracy σ of each mirror of said scanning image forming optical system is exploded into components of a spatial frequency within a range of the spatial frequency

(1/L: line/mm) of:

$0.1 < (1/L) < 5$,

a mirror surface accuracy σ, and a focal length $f\sigma$ in the main scanning direction at said surface accuracy σ satisfy a condition:

(23) $0 < \log \sigma < -2 \log (1/L) + \log [1/\{64\ f\sigma\}]$

within a range of luminous flux width equal to or greater than W in the main scanning direction on said mirror surface, and satisfy a condition:

(24) $0 < \log \sigma i < -2 \log (1/W) + \log [1/\{64\ f\sigma\}]$

within a range of luminous flux equal to or smaller than W.

98. An image forming apparatus according to claim 95, wherein, said photosensitive medium is a photoconductive member, and an electrostatic latent image formed through uniform charging and optical scanning by the optical scanner of the photosensitive surface of the photoconductive member is visualized into a toner image.

99. An image forming apparatus according to claim 96, wherein, said photosensitive medium is a photoconductive member, and an electrostatic latent image formed through uniform charging and optical scanning by the optical scanner of the photosensitive surface of the photoconductive member is visualized into a toner image.

100. An image forming apparatus according to claim 97, wherein, said photosensitive medium is a photoconductive member, and an electrostatic latent image formed through uniform charging and optical scanning by the optical scanner of the photosensitive surface of the photoconductive member is visualized into a toner image.

101. An optical scanning lens used in a scanning image forming optical system which condenses a luminous flux deflected by an optical deflector near a surface to be scanned,

wherein, when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times S'^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between a rear principal point and an image surface in the scanning image forming optical system.

102. An optical scanning lens used in a scanning image

forming optical system which condenses a luminous flux deflected by an optical deflector near a surface to be scanned,

wherein, when a maximum value of dispersion of curvature distribution of a curved surface in a main scanning direction within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \le 2 \times w^2/\{(n-1) \times \lambda \times F^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

F: focal length of the scanning image forming optical system as a whole in the main scanning direction.

103. An optical scanning lens used in a scanning image forming optical system which condenses a luminous flux deflected by an optical deflector near a surface to be scanned,

wherein, when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$0.2/K \le \Delta C \times (n-1) \times \lambda \times (S'/w)^2 \le 2$$

is satisfied, where:

K: number of optical elements from the optical deflector to an image surface of the scanning image forming optical system;

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between the rear principal point and the image surface in the scanning image forming optical system.

104. An optical scanning lens used in a scanning image forming optical system which condenses a luminous flux deflected by an optical deflector near a surface to be scanned,

wherein, when an average curvature of a curved surface within an area through which passes the luminous flux is q(x), and an approximate curve of a tenth or lower degree of q(x) is q0(x), a relationship:

$$q\_\_PV \ x \ (n-1) \ x \ \lambda \ x \ (F/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned in the main scanning direction;

n: refractive index of the lens;

λ: light source wavelength;

F: focal length of the scanning image forming optical system in the main scanning direction; and

$$q\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\}.$$

105. An optical scanning lens used in a scanning image forming optical system which condenses a luminous flux deflected by an optical deflector near a surface to be scanned,

wherein, when an average curvature of a curved surface within an area of the lens through which passes the luminous flux is $q(x)$, and an approximate curve of a tenth or lower degree of $q(x)$ is $q0(x)$, a relationship:

$$0.1/K \leq q\_PV \times (n-1) \times \lambda \times (S'/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength;

S': distance between the rear principal point and the image surface of the scanning image forming optical system; and

$$q\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\}.$$

106. An optical scanner comprising:

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans the surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times S'^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between a rear principal point and an image surface in the scanning image forming optical system

107. An optical scanner comprising:

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans the surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when a maximum value of dispersion of curvature distribution of a curved surface in a main scanning direction within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times F^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

F: focal length of the scanning image forming optical system as a whole in the main scanning direction.

108. An optical scanner comprising:

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans the surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$0.2/K \leq \Delta C \times (n-1) \times \lambda \times (S'/w)^2 \leq 2$$

is satisfied, where:

K: number of optical elements from the optical deflector to an image surface of the scanning image forming optical system;

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between the rear principal point and the image surface in the scanning image forming optical system.

109. An optical scanner comprising:

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans the surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when an average curvature of a curved surface within an area through which passes the luminous flux is q(x), and an approximate curve of a tenth or lower degree of q(x) is q0(x), a relationship:

$$q\_PV \times (n-1) \times \lambda \times (F/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned in the main scanning direction;

n: refractive index of the lens;

λ: light source wavelength;

F: focal length of the scanning image forming optical system in the main scanning direction; and

$$q\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\}.$$

110. An optical scanner comprising:

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans the surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when an average curvature of a curved surface within an area of the lens through which passes the luminous flux is q(x), and an

approximate curve of a tenth or lower degree of $q(x)$ is $q0(x)$, a relationship:

$$0.1/K \leq q\_PV \times (n-1) \times \lambda \times (S'/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength;

S': distance between the rear principal point and the image surface of the scanning image forming optical system; and

$$q\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\}.$$

111. An image forming apparatus comprising:

a photosensitive member; and

an optical scanner including,

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the

optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans the surface to be scanned at a uniform speed by means of said optical spot,

wherein, in said optical scanning lens, when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times S'^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between a rear principal point and an image surface in the scanning image forming optical system, and

wherein the surface to be scanned comprises the photosensitive member, and an electrostatic latent image is formed on the surface to be scanned through optical scanning of the surface to be scanned by said optical scanner.

112. An image forming apparatus comprising:

a photosensitive member; and

an optical scanner including,

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans a surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when a maximum value of dispersion of curvature distribution of a curved surface in a main scanning direction within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times F^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

F: focal length of the scanning image forming optical system as a whole in the main scanning direction, and

wherein the surface to be scanned comprises the

photosensitive member, and an electrostatic latent image is formed on the surface to be scanned through optical scanning of the surface to be scanned by said optical scanner.

113. An image forming apparatus comprising:

a photosensitive member; and

an optical scanner including,

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans a surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$0.2/K \leq \Delta C \times (n-1) \times \lambda \times (S'/w)^2 \leq 2$$

is satisfied, where:

K: number of optical elements from the optical deflector to an image surface of the scanning image forming optical system;

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between the rear principal point and the image surface in the scanning image forming optical system, and

wherein the surface to be scanned comprises the photosensitive member, and an electrostatic latent image is formed on the surface to be scanned through optical scanning of the surface to be scanned by said optical scanner.

114. An image forming apparatus comprising:

a photosensitive member; and

an optical scanner including,

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the

optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans a surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when an average curvature of a curved surface within an area through which passes the luminous flux is q(x), and an approximate curve of a tenth or lower degree of q(x) is q0(x), a relationship:

$$q\_\_PV \times (n-1) \times \lambda \times (F/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned in the main scanning direction;

n: refractive index of the lens;

λ: light source wavelength;

F: focal length of the scanning image forming optical system in the main scanning direction; and

$$q\_\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\},$$

and,

wherein the surface to be scanned comprises the photosensitive member, and an electrostatic latent image is formed on the surface to be scanned through optical scanning of the surface to be scanned by said optical scanner.

115. An image forming apparatus comprising:

a photosensitive member; and

an optical scanner including,

a light source;

an optical deflector having a deflecting reflective surface and configured to deflect a luminous flux from the light source; and

a scanning image forming optical system including an optical scanning lens,

wherein the optical scanner deflects the luminous flux from the light source at an equiangular speed with the optical deflector, condenses the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scans a surface to be scanned at a uniform speed by means of said optical spot, and

wherein, in said optical scanning lens, when an average curvature of a curved surface within an area of the lens through which passes the luminous flux is q(x), and an approximate curve of a tenth or lower degree of q(x) is q0(x), a relationship:

$$0.1/K \leq q\_\_PV \times (n-1) \times \lambda \times (S'/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength;

S': distance between the rear principal point and the image surface of the scanning image forming optical system; and

$$q\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\},$$

and

wherein the surface to be scanned comprises the photosensitive member, and an electrostatic latent image is formed on the surface to be scanned through optical scanning of the surface to be scanned by said optical scanner.

116. An optical scanning method, comprising the steps of:

providing a scanning image forming optical system including an optical scanning lens, in which when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times S'^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between a rear principal point and an

image surface in the scanning image forming optical system; and

causing an optical deflector to deflect a luminous flux from a light source at an equiangular speed, condensing the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scanning the surface to be scanned at a uniform speed by means of said optical spot.

117. An optical scanning method, comprising the steps of:

providing a scanning image forming optical system including an optical scanning lens, in which when a maximum value of dispersion of curvature distribution of a curved surface in a main scanning direction within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$\Delta C \leq 2 \times w^2/\{(n-1) \times \lambda \times F^2\}$$

is satisfied, where:

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

F: focal length of the scanning image forming optical system as a whole in the main scanning direction;

and

causing an optical deflector to deflect a luminous flux from a light source at an equiangular speed, condensing the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scanning the surface to be scanned at a uniform speed by means of said optical spot.

118. An optical scanning method, comprising the steps of:

providing a scanning image forming optical system including an optical scanning lens, in which when a maximum value of dispersion of curvature distribution of a curved surface within an area of the lens through which passes the luminous flux is ΔC, a relationship:

$$0.2/K \leq \Delta C \times (n-1) \times \lambda \times (S'/w)^2 \leq 2$$

is satisfied, where:

K: number of optical elements from the optical deflector to an image surface of the scanning image forming optical system;

w: beam spot radius on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength; and

S': distance between the rear principal point and the image surface in the scanning image forming optical

system; and

causing an optical deflector to deflect a luminous flux from a light source at an equiangular speed, condensing the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scanning the surface to be scanned at a uniform speed by means of said optical spot.

119. An optical scanning method, comprising the steps of:

providing a scanning image forming optical system including an optical scanning lens, in which when an average curvature of a curved surface within an area through which passes the luminous flux is q(x), and an approximate curve of a tenth or lower degree of q(x) is q0(x), a relationship:

$$q\_\_PV \times (n-1) \times \lambda \times (F/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned in the main scanning direction;

n: refractive index of the lens;

λ: light source wavelength;

F: focal length of the scanning image forming optical system in the main scanning direction; and

$$q\_\_PV = \max\{q(x) - q0(x)\}$$

$- \min \{q(x) - q0(x)\}$; and

causing an optical deflector to deflect a luminous flux from a light source at an equiangular speed, condensing the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scanning the surface to be scanned at a uniform speed by means of said optical spot.

120. An optical scanning method, comprising the steps of:

providing a scanning image forming optical system including an optical scanning lens, in which when an average curvature of a curved surface within an area of the lens through which passes the luminous flux is q(x), and an approximate curve of a tenth or lower degree of q(x) is q0(x), a relationship:

$$0.1/K \leq q\_\_PV \times (n-1) \times \lambda \times (S'/wd)^2 \leq 1$$

is satisfied, where:

wd: beam spot diameter on the surface to be scanned;

n: refractive index of the lens;

λ: light source wavelength;

S': distance between the rear principal point and the image surface of the scanning image forming optical

system; and

$$q\_PV = \max\{q(x) - q0(x)\} - \min\{q(x) - q0(x)\};$$ and

causing an optical deflector to deflect a luminous flux from a light source at an equiangular speed, condensing the deflected luminous flux onto a surface to be scanned as an optical spot through the optical scanning lens, and scanning the surface to be scanned at a uniform speed by means of said optical spot.